



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

in the hand, is made of the same thickness as the largest joint of the case, which shuts close on it, when drawn over the umbrella.

The number of joints of the case must depend on the length of the part that projects beyond the umbrella, and holds the ferule; but in general, three or four will be sufficient.

Twelve figures of the umbrella in various states is given in the specification of the patent, which will prevent any mistake from arising in its construction to those who wish to copy it when the patent is expired.

Observations.... It will be difficult to make umbrellas of this kind sufficiently strong and durable without rendering them clumsy. If the cases are made to fit tight, they will soon wear out the covering of the umbrella; if the bones, runners, and joints are made small, so as to take up little room, they will soon break; and if the cases are made easy, and the other parts of the umbrella strong, it can scarcely avoid appearing too massive when shut up; perhaps the nice medium may be found, after many trials, which will best comprise the advantages without the inconveniences of the invention. As this, however, is a lady's patent, we must not criticise it too much, but will rather conclude with wishing it may be sufficiently profitable to her, to induce others of her sex to turn their attention to the useful arts, for which we are convinced, they are in no wise deficient in the abilities and talents requisite.

Method of preventing the Accidents which frequently happen, from the Linch Pins of Carriages breaking and coming out; by Mr. J. Varty, Coach-maker, Liverpool.

Trans. Soc. Arts.

In Mr. Varty's method of securing linch pins, a small groove is cut in front, close to the bottom of the aperture, through which the linch pin passes, in which a small piece of iron turns on a pivot in such a manner, that when the linch pin is removed it may be pushed back into the aperture, which the latter has just quitted, so that the wheel may

be taken off or put on; but when left to itself it hangs down in front of the wheel, so as to prevent its slipping off in case the linch pin should drop out or break, as it cannot be forced forward without breaking the pivot: the linch pin is fastened on in the usual manner.

This contrivance has been tried in a stage-coach, which has run from Liverpool to Litchfield, a distance of 84 miles, six days in every week, for six months; during which time several instances have occurred, in which the linch pins have broke or come out, but owing to their places being supplied by the means above described, no accident has happened. It is well known that coaches are so frequently upset, more from the linch pins breaking than from any other cause, which renders this invention of the more importance.

Several certificates were sent to the Society of Arts, both from stage-drivers, and others, of the many accidents which happen from linch pins breaking, and of the efficacy of Mr. Varty's contrivance; for which the Society voted him their silver medal.

Account of a Red Earth found in Jamaica, which has all the properties of Italian Puzzolana.

Trans. Soc. Arts, v.5, p. 215.

Mr. Brown of Jamaica, who sent a quantity of the red earth to the Society for the Encouragement of Arts, &c. thus describes his method of using it, and its properties.

"To one measure of the red earth, add two of well slacked lime, and one of sand; let them be well mixed and wrought like common mortar; with fair water, and made up in a heap: in about eight hours it will begin to acquire a hardness, and the heap must then be cut down and well mixed over again, and be smartly worked and wet morning and evening, for a whole week, before it is fit for use. After it is laid on, it must be strictly attended, while it dries and hardens, to close any crack that may then appear in it, for about forty eight hours, after which time it is generally out of danger.

But if any cracks should appear, after it is quite dry (when used for the

covering of a building, lining of a cistern, &c.) a labourer, with a little sand, or brick dust, and a little common whitewash thrown over the crack, and smartly rubbed in with a brickbat, or sandy stone, will soon make the crack disappear, and the work will be as good as ever.

Cisterns, reservoirs, canals, and all manner of conveniences to collect rain water, and retain it, may be made and completely finished with this composition at a small expense.

A mortar may be made (far exceeding any other) of this composition, wherewith to lay the foundation, and raise the superstructure of any dam, bridge, or guttering; and in short, any kind of building where water is concerned, because this mortar will harden, and soon become like a stone, totally immersed in water.

Of this composition may be made the best coverings for all manner of buildings; of which my own house is a proof, that has been covered with this composition (though not at that time brought to its present perfection) twenty years ago, and is not now in the least worse than at first.

In regard to matters of pleasure, terrace walks, canals, flowerpots, urns, obelisks, statues, and even colossal statues, and other ornaments for gardens, may be made of this composition, as it resists rain, and every sort of moisture, and nothing but violence will make the least impression upon it; so that the five orders of architecture, with their various ornaments may be most elegantly expressed by it, on the outside or inside of buildings, in the plaisterer's way, and last for ages if no violence is used to them.

In covering a building I would chuse to lay it six inches thick, upon a flat strong framed well-lathed roof, as it will shrink in drying. It is the best and cheapest covering I know of, as I have experienced ever since 1747."

Mr. Robert Mylne, the well known architect (to whom the above extract from Mr. Brown's letter was sent by Mr. Moore, secretary to the Society for the Encouragement of Arts, &c. in 1774)

sent a letter to Mr. Moore in 1784, stating that he had tried the red Jamaica earth, and that "it turns out to be a very good substitute for Dutch tarras, or Italian puzzolana, for works immersed in water. Mr. Mylne sent another letter in 1786, to Mr. Moore, on the same subject, which contains the following particulars.

Sir...I have it now in my power to write to you decidedly on the red earth, of which I received a specimen.

I have put it to very severe trials, and have found it to answer extremely well, as a substitute for Dutch terras, or Puzzolana earth from Italy. They are all three volcanic substances, and have the same peculiar properties. Besides what I received from you, I obtained by means of a friend, a quantity from Jamaica: which, on comparative trials, proved the same as that you sent. It is found in vast quantities on the estate of Mr. Brown, in the parish of St. Elizabeth, in Jamaica. There are many acres of it, for it lies on the surface of the ground; in which it differs from the Italian Puzzolana, which lies in strata under ground like coal. Dutch tarras is a *Tufa* stone, found on the rocky banks of the Rhine, and reduced to powder by mills in Holland.

Mr. Brown who sent the Jamaica terras to the society, is since dead, and the estate on which it is found, is called Dettingen, and is now the property of his son a very intelligent gentleman."

Observations... This paper is inserted on account of its so strongly corroborating the remarks on the same subject, made on M. Gratian Lépères' report on natural and artificial puzzolana, inserted in vol. 3d, page 293, and those in the paper relative to flat roofs, in the 4th vol. page 133, to which we beg leave to refer, both for the general advantages of adopting this mode of forming roofs, and for those peculiar to this part of Ireland.

Though this paper has been published some time, its contents are so little known to the public, that

it still has most of the advantages of novelty to recommend it, and besides that of conveying information on a matter which with justice, is very interesting to many, who are either professors, or amateurs of architecture; and which ought to be so to most others also, as the greatest part of mankind are more or less concerned in the proper construction, and extended preservation of houses, and of those other works likewise, to which cements impervious to water can be applied.

Had the ingenious gentleman who wrote this paper, been now alive, it would have given him much pleasure, to see the hint, which he has thrown out, relative to the application of those cements, to the ornamental parts of architecture, realized; several specimens of this kind are now to be seen in London, which endure the weather extremely well; of which the new Theatre at Covent Garden is the most remarkable, for the ingenuity exercised in the application of the cement to the high projections of the Doric cornice, as well as for its great beauty and extent.

The directions given in this paper, for the great thickness of the coat of puzzolana on the roof, appear more necessary for the hot climate where it was used, than for this.—Thick roofs keep a house cool in Summer, and warm in cold weather; but in our temperate climate, a thinner roof will do sufficiently well, and be cheaper, both from not requiring so much cement, and from timber of less scantling being necessary for its support, on account of its greater lightness.

But where strength and durability are preferred to lightness of timbering, it might be the cheapest method to cover the rafters with a layer of bricks cemented together with the puzzolana, with one or two coats of it, of about an inch thick, layed over all.

In addition to the advantage of flat roofs, mentioned in page 135, vol. 3, for which roofs puzzolana is peculiarly adapted, it should be noticed that they would afford great facility for escape in case of accidents by

fire, if the neighbouring houses were also furnished with them, as in this case the passage from the top of one house to another would be attended with little difficulty or danger. The same circumstance would also much assist efforts for extinguishing fires, as well as escaping from them; for on the neighbouring flat roofs, fire engines might be worked with as much ease as on the ground, and in many cases with much more efficacy.

Flat roofs likewise would afford the convenience of permitting chimneys to be swept, with very little trouble in the simplest manner, without having recourse to the inhuman, and in many instances fatal practice of sending unfortunate children up the flues; a practice, with which we can scarcely find any parallel in point of unnecessary cruelty to tender and helpless years, among the most savage nations; and to which nothing but tyrant custom could at all reconcile us, so as to contemplate it with the usual indifference.

On the art of Printing with Stone, and on the progress which this art has made in Germany. by M. Marcel de Serres. Annales de Chemie.

The art of printing with stone was originally discovered in Germany, and has since spread into England, Italy, and lately into France. Alois Senefelter, a native of Prague in Bohemia, is the inventor of this new method of printing, which is known in Germany by the name of *chemische druckery*, i. e. chemical printing. It is now nine years since he obtained from the then elector of Bavaria, an exclusive privilege to exercise it for 13 years, but Senefelter soon after ceded this privilege to his brothers; some time afterwards he ceded this privilege to M. Andre of Offenback, who has since carried on the art in England. In 1802 he went to Vienna to solicit a fresh privilege, which he obtained in 1803, from the emperor of Austria for the term of 30 years. He disposed of this privilege to Messrs. Steiner and Krasnitski, and returned to Bavaria, where, having arrived at Munich, he opened in partnership with some other persons,